FIG. 1

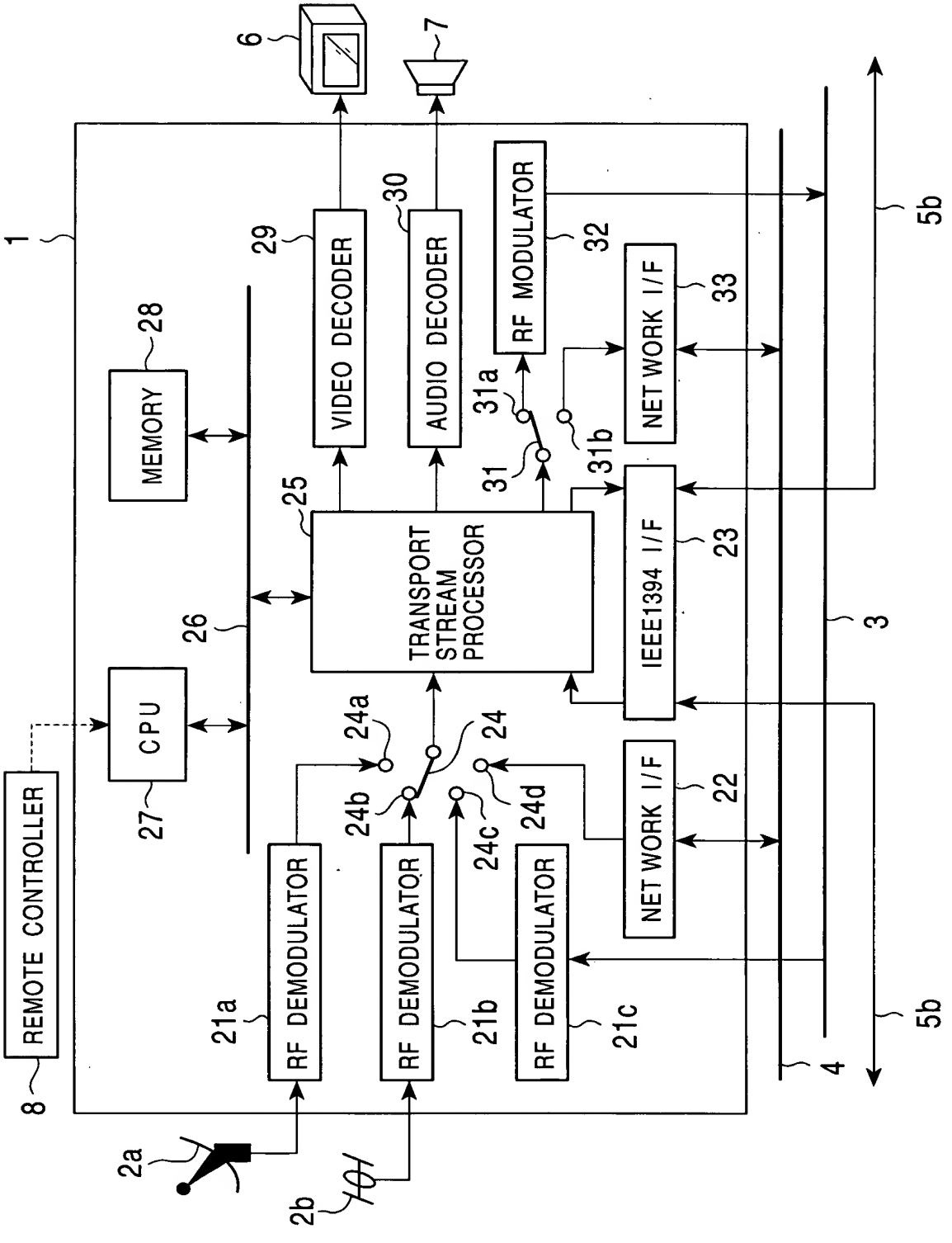

1
2a
2b
3
4
5b
6
7
8
REMOTE CONTROLLER
CPU
27
MEMORY
28
26
TRANSPORT STREAM PROCESSOR
25
VIDEO DECODER
29
AUDIO DECODER
30
RF MODULATOR
32
NET WORK I/F
33
IEEE1394 I/F
23
NET WORK I/F
22
RF DEMODULATOR
21a
RF DEMODULATOR
21b
RF DEMODULATOR
21c
24
24a
24b
24c
24d
31
31a
31b

FIG. 2

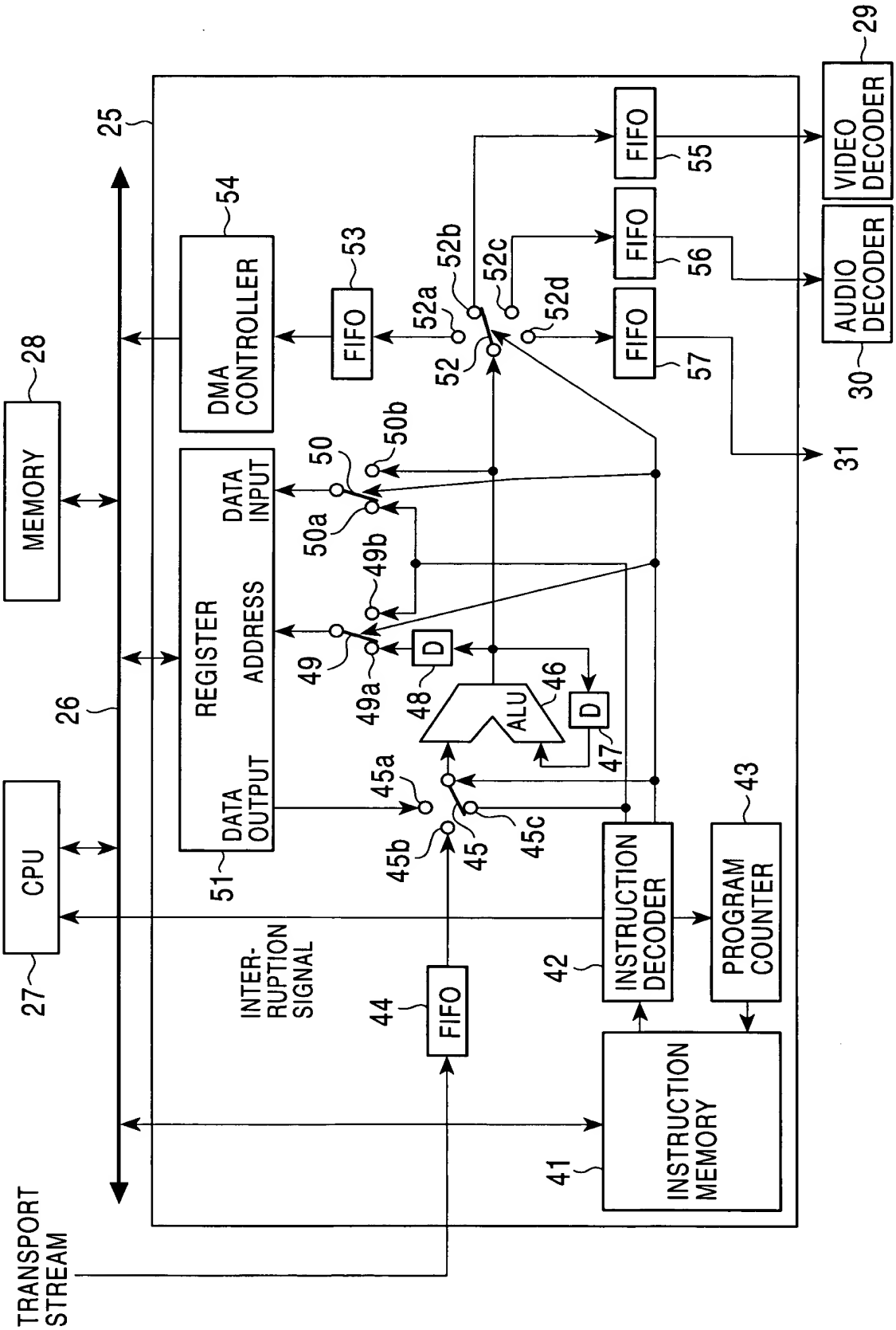

TRANSPORT STREAM
CPU
MEMORY
DMA CONTROLLER
REGISTER
DATA OUTPUT
ADDRESS
DATA INPUT
INTER-RUPTION SIGNAL
INSTRUCTION DECODER
PROGRAM COUNTER
INSTRUCTION MEMORY
ALU
FIFO
VIDEO DECODER
AUDIO DECODER
25
26
27
28
29
30
31
41
42
43
44
45
45a
45b
45c
46
47
48
49
49a
49b
50
50a
50b
51
52
52a
52b
52c
52d
53
54
55
56
57

FIG. 3

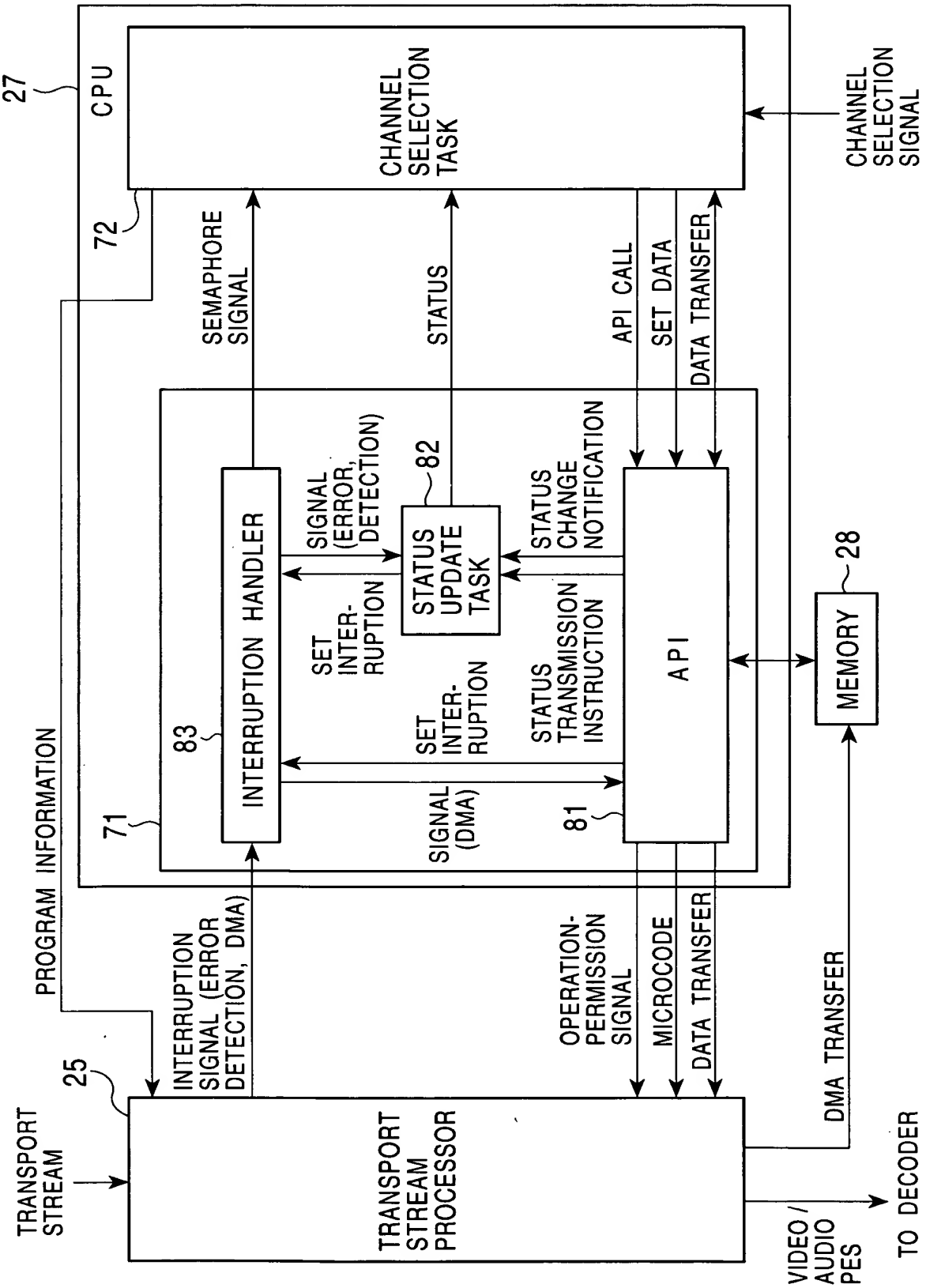

27
CPU
CHANNEL SELECTION TASK
CHANNEL SELECTION SIGNAL
72
SEMAPHORE SIGNAL
STATUS
API CALL
SET DATA
DATA TRANSFER
PROGRAM INFORMATION
71
83
INTERRUPTION HANDLER
SIGNAL (ERROR, DETECTION)
82
STATUS UPDATE TASK
STATUS CHANGE NOTIFICATION
SET INTER-RUPTION
STATUS TRANSMISSION INSTRUCTION
SET INTER-RUPTION
SIGNAL (DMA)
81
API
28
MEMORY
INTERRUPTION SIGNAL (ERROR DETECTION, DMA)
OPERATION-PERMISSION SIGNAL
MICROCODE
DATA TRANSFER
DMA TRANSFER
25
TRANSPORT STREAM
TRANSPORT STREAM PROCESSOR
VIDEO / AUDIO PES
TO DECODER

FIG. 4

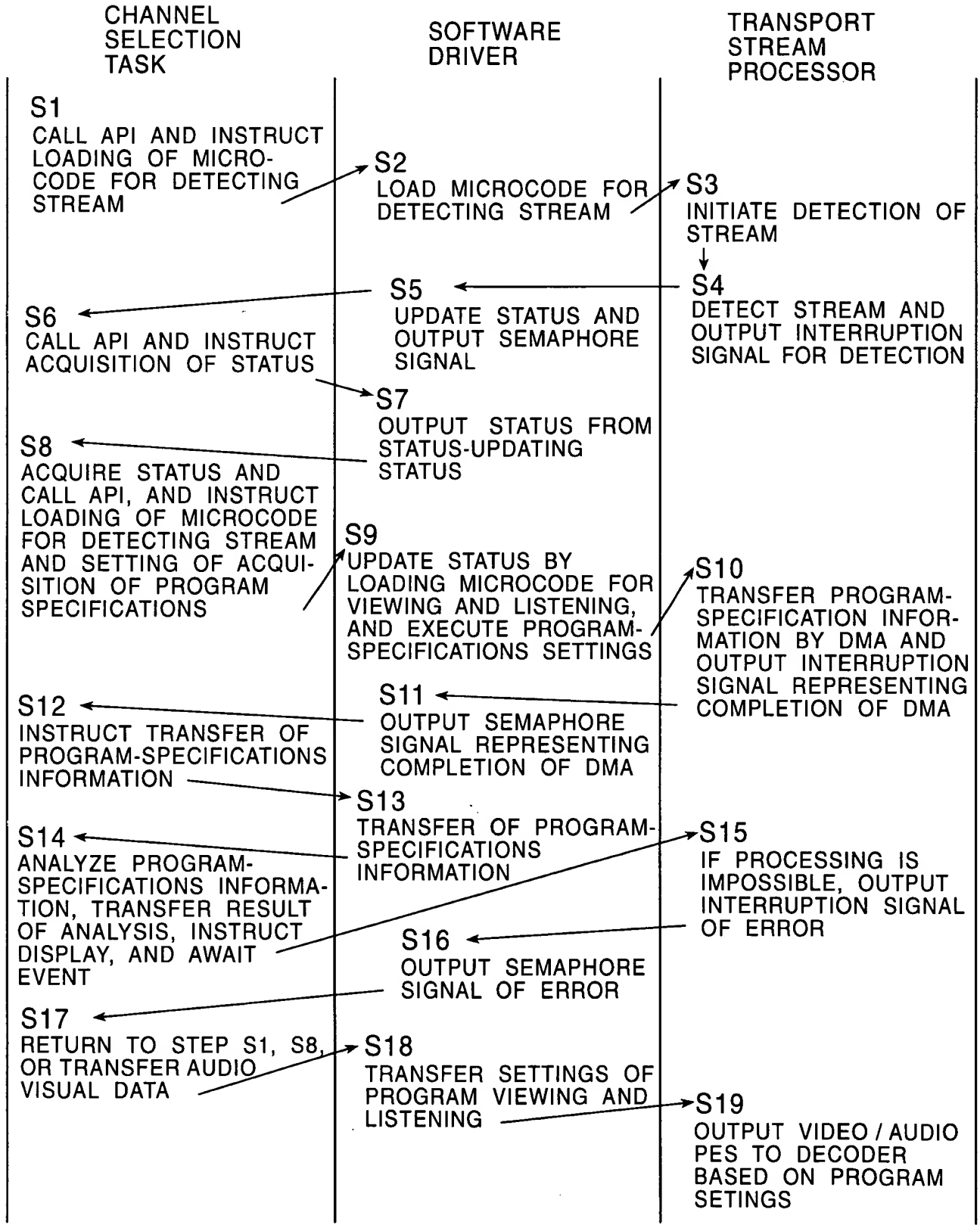

CHANNEL SELECTION TASK
SOFTWARE DRIVER
TRANSPORT STREAM PROCESSOR
S1
CALL API AND INSTRUCT LOADING OF MICRO-CODE FOR DETECTING STREAM
S2
LOAD MICROCODE FOR DETECTING STREAM
S3
INITIATE DETECTION OF STREAM
S4
DETECT STREAM AND OUTPUT INTERRUPTION SIGNAL FOR DETECTION
S5
UPDATE STATUS AND OUTPUT SEMAPHORE SIGNAL
S6
CALL API AND INSTRUCT ACQUISITION OF STATUS
S7
OUTPUT STATUS FROM STATUS-UPDATING STATUS
S8
ACQUIRE STATUS AND CALL API, AND INSTRUCT LOADING OF MICROCODE FOR DETECTING STREAM AND SETTING OF ACQUISITION OF PROGRAM SPECIFICATIONS
S9
UPDATE STATUS BY LOADING MICROCODE FOR VIEWING AND LISTENING, AND EXECUTE PROGRAM-SPECIFICATIONS SETTINGS
S10
TRANSFER PROGRAM-SPECIFICATION INFORMATION BY DMA AND OUTPUT INTERRUPTION SIGNAL REPRESENTING COMPLETION OF DMA
S11
OUTPUT SEMAPHORE SIGNAL REPRESENTING COMPLETION OF DMA
S12
INSTRUCT TRANSFER OF PROGRAM-SPECIFICATIONS INFORMATION
S13
TRANSFER OF PROGRAM-SPECIFICATIONS INFORMATION
S14
ANALYZE PROGRAM-SPECIFICATIONS INFORMATION, TRANSFER RESULT OF ANALYSIS, INSTRUCT DISPLAY, AND AWAIT EVENT
S15
IF PROCESSING IS IMPOSSIBLE, OUTPUT INTERRUPTION SIGNAL OF ERROR
S16
OUTPUT SEMAPHORE SIGNAL OF ERROR
S17
RETURN TO STEP S1, S8, OR TRANSFER AUDIO VISUAL DATA
S18
TRANSFER SETTINGS OF PROGRAM VIEWING AND LISTENING
S19
OUTPUT VIDEO / AUDIO PES TO DECODER BASED ON PROGRAM SETINGS

FIG. 5

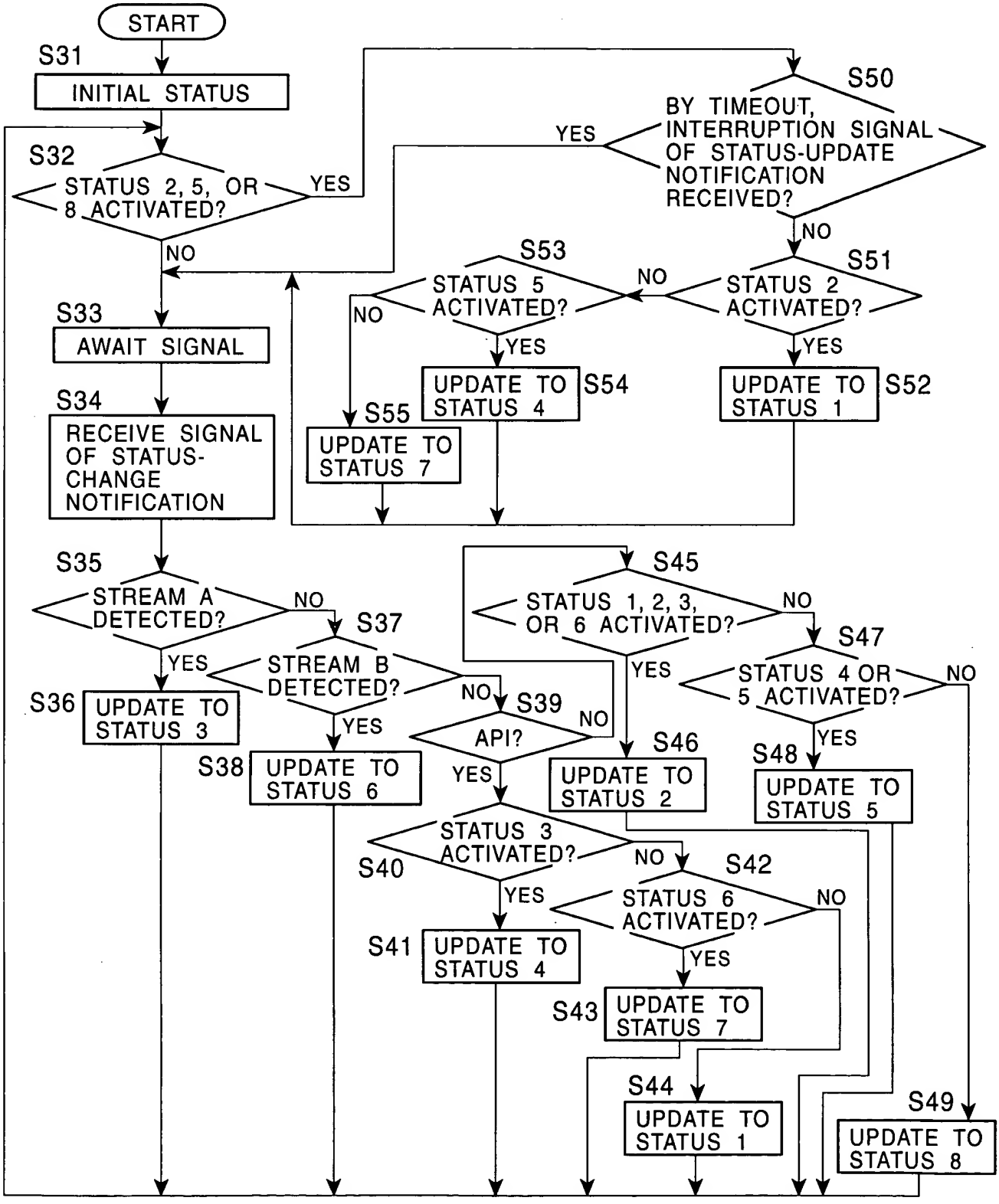

START
S31
INITIAL STATUS
S32
STATUS 2, 5, OR 8 ACTIVATED?
YES
NO
S33
AWAIT SIGNAL
S34
RECEIVE SIGNAL OF STATUS-CHANGE NOTIFICATION
S35
STREAM A DETECTED?
NO
YES
S36
UPDATE TO STATUS 3
S37
STREAM B DETECTED?
NO
YES
S38
UPDATE TO STATUS 6
S39
API?
NO
YES
S40
STATUS 3 ACTIVATED?
NO
YES
S41
UPDATE TO STATUS 4
S42
STATUS 6 ACTIVATED?
NO
YES
S43
UPDATE TO STATUS 7
S44
UPDATE TO STATUS 1
S45
STATUS 1, 2, 3, OR 6 ACTIVATED?
NO
YES
S46
UPDATE TO STATUS 2
S47
STATUS 4 OR 5 ACTIVATED?
NO
YES
S48
UPDATE TO STATUS 5
S49
UPDATE TO STATUS 8
S50
BY TIMEOUT, INTERRUPTION SIGNAL OF STATUS-UPDATE NOTIFICATION RECEIVED?
YES
NO
S51
STATUS 2 ACTIVATED?
NO
YES
S52
UPDATE TO STATUS 1
S53
STATUS 5 ACTIVATED?
NO
YES
S54
UPDATE TO STATUS 4
S55
UPDATE TO STATUS 7

FIG. 6

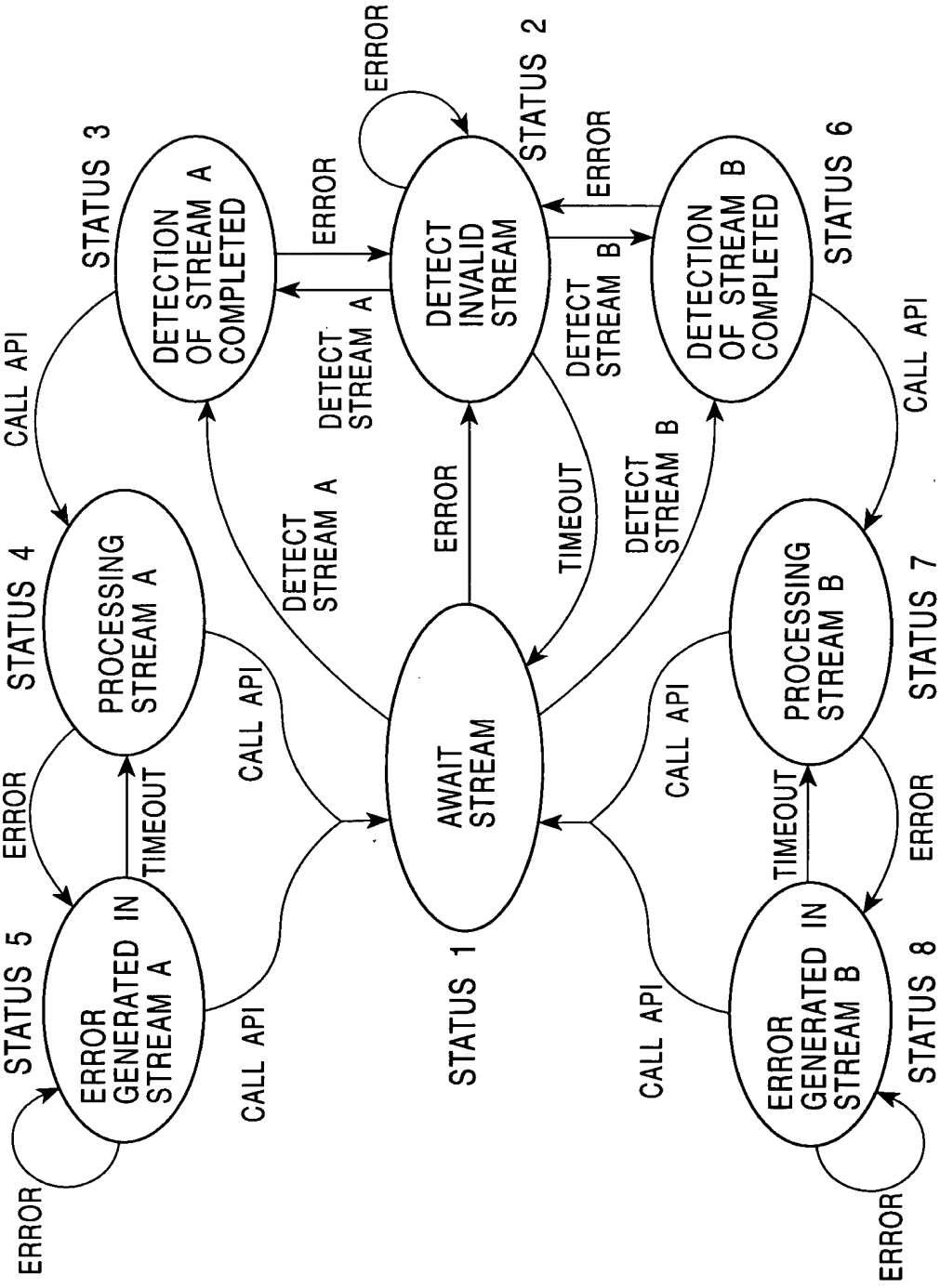
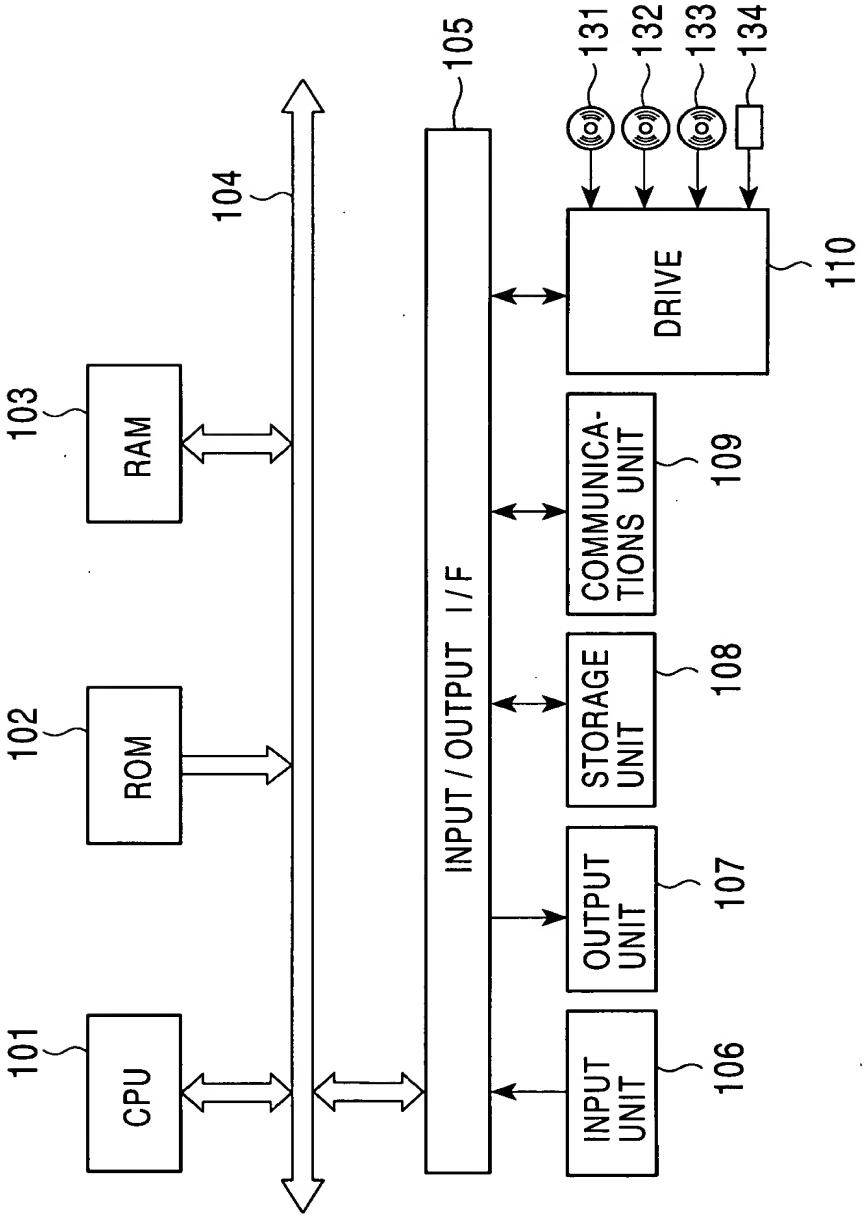

STATUS 1
AWAIT STREAM
STATUS 2
DETECT INVALID STREAM
STATUS 3
DETECTION OF STREAM A COMPLETED
STATUS 4
PROCESSING STREAM A
STATUS 5
ERROR GENERATED IN STREAM A
STATUS 6
DETECTION OF STREAM B COMPLETED
STATUS 7
PROCESSING STREAM B
STATUS 8
ERROR GENERATED IN STREAM B
CALL API
ERROR
TIMEOUT
DETECT STREAM A
DETECT STREAM B

FIG. 7


101
CPU
102
ROM
103
RAM
104
105
INPUT / OUTPUT I / F
106
INPUT UNIT
107
OUTPUT UNIT
108
STORAGE UNIT
109
COMMUNICA-TIONS UNIT
110
DRIVE
131
132
133
134